

**Christopher C. Fuller**  
**8901 River Ridge Circle**  
**Bloomington MN 55425**  
**(952) 607-8506, (952) 891-1843**  
**Chris.Fuller@Bloomington55425.Com**

**SUMMARY**

- Solid background in the design, construction, and testing of RF, microwave, near-field, analog, power and digital circuits, and systems including PCB layout, manufacturing and debugging.
- Skilled in the use of a wide range of development tools including Mentor, ADS/EESOF, Momentum, HFSS, Xfdtd, MATLAB, SPICE, Eagle layout, ORCAD, Atmel and Xilinx tools, MS Project and others.
- Experienced author of software and firmware for PCs and a variety of embedded systems.

**EXPERIENCE**

- **United Technologies, Arden Hills, Minnesota** **2013-Present**  
Staff RF Engineer designing commercial high-volume security system sensors and panels including IoT products. Technology development of advanced radar, wireless power, and remote control products. Production support including redesign of existing products due to parts obsolescence and other issues. Four radar patents not yet published.
- **Alliant Techsystems, Plymouth, Minnesota** **1998-2000;2006-2013**  
Development of requirements, system simulations, hardware and software for advanced next-generation radar seeker, bullet tracking radar, proximity sensors, and radar altimeter for helicopter airbag system often as the lead RF engineer. Developed algorithms and embedded firmware for Analog Devices Blackfin and Tigersharc DSPs. EMC requirements development and design analyses using hand analyses, Xfdtd and HFSS on projects including MDA missile hardware and a UAV radar. Technical writer on many proposals. Research and Development of near-field low-frequency lenses using advanced composites for improved communication, radar, power transmission and other applications which resulted in patents 7928900, 9263804, and 20120274147.
- **Medtronic, Fridley, Minnesota** **2000-2006**  
Engineer in the development of implant and external base-station radio circuits, sensors and antennas, including long-range telemetry and near-field inductively coupled telemetry. Developed test plans, test systems (including RF, digital, analog and Labview software) and executed tests for design verification, qualification, and production testing for implant and external base-station radios. Focal point for radio regulatory issues related to Short Range medical Devices (SRD) including coordination with representatives of radio regulatory agencies throughout the world. EMC evaluation of implant feed through filters and RF wireless power ablation. Chairman of the Electrical Modeling Forum. Advanced R&D which included innovative implantable glucose sensor, advanced noise reduction techniques and patents 8046072, 7672731, 7742816, and 7467014. Mentored junior engineers and technicians in RF design.
- **Motorola, Schaumburg, Illinois** **1995-1998**  
Senior Engineer in the RF design of circuits for the iDEN digital cellular phone base-station radios, digital cellular phones, pagers, two-way radios, and computer communications. Mentored RF engineers and manufacturing personnel. Mentored junior RF engineers in RF design.
- **Lockheed Martin/IDEA, Goddard Space Flight Center, Greenbelt, Maryland** **1989-1995**  
Designed electronics for spacecraft subsystems and science instruments including attitude sensing and control. Designed a high-power Solid State Relay for the Solar Power system of the Small Explorer FAST satellite. Debug/redesign of a custom high speed modem and flight computer for the Shuttle HitchHiker Program. Lead design engineer responsible for design of low-noise front-end analog circuitry for an X-Ray camera array and digital interface circuitry. Lead engineer in testing and debugging of a telemetry processing ground station for the SPARTAN program. Attitude Control Engineer on the Hubble Space Telescope and Small Explorer Satellites. Design reviewer for a variety of technical projects. Investigator on a scientific study of the use of X-Ray Interferometry for Imaging X-Ray Stars. Technical writer for many proposals including project planning and cost estimating. Engineer for an Ultra-Violet spectrometer used to measure Ozone (SSBUV). Operations Director for SSBUV for two space shuttle missions (STS-56 and STS-62). Technical writer for proposals

## SELECTED PUBLICATIONS:

- RF Design for Challenging Environments, Wireless Medical Devices & Systems Workshop, 2015
- Antenna Near-Field Parasitics: Recent Advances, DX/MTT Convention, 2013
- RF Circuit Design, 2012 IEEE Workshop on Wireless Bio-Sensors and Medical Devices, 2012
- A New Method for Radar-Based Proximity Sensors, 56<sup>th</sup> Annual NDIA Fuze Conference, 2012
- Next Generation Proximity Sensor Test Results, 55<sup>th</sup> Annual NDIA Fuze Conference, 2011
- Design of Composite Materials Using a Genetic Algorithm (co-author), IEEE EMC Symposium, 2009
- Evaluation of Effective Electrical Properties for Lossy Periodic Composite Structures Using a Finite Difference Method (co-author), 2008 URSI conference

## OTHER

- Amateur Radio Hobbyist (General Class) **Present**
- Vice-Chairman of IEEE MRI Safety/Compatibility Considerations for Medical Devices **2013**
- Twin Cities IEEE Outstanding Volunteer Award **2013**
- Chairman and Vice-Chair of the IEEE Microwave Theory Society – Twin Cities **2006-Present**
- Vice-Chairman of IEEE Wireless Biomedical Workshop **2012**
- Medtronic Innovative Creativity Excellence Award **2000**
- NASA Achievement Award **1995**
- Lockheed Martin (General Electric) Employee of the Year. **1991**
- Letter of Commendation from Admiral Doebler at the Pentagon. **1988**

## PATENTS

- 9263804 Composites for Antennas and Other Applications **2016**
- 20120274147 Wireless Energy Transmission Using Near-Field Energy **2012**
- 7928900 Resolution Antenna Array Using Metamaterials **2011**
- 8046072 Prioritization of Communications from Medical Devices **2011**
- 7672731 Implantable Device Including Multiple Communication Antennas **2010**
- 7742816 Multichannel Communication for Implantable Medical Device Applications **2010**
- 7467014 Compact and Conformal Telemetry Antennas for Implantable Medical Devices **2008**

## EDUCATION

- Johns Hopkins University, Baltimore, Maryland  
M.S. in Electronics Engineering **May 1996**  
**4.0 GPA**
- University of Minnesota, Minneapolis, Minnesota  
B.S. in Electronics Engineering **June 1988**